

Ship March 21st !!!

Work Order ID 66663

Wednesday, February 23, 2011 1:13:18 PM

Page 1

Item ID: D3510-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011 Start Qty: 2.00

Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00

Customer:

Reference:

Approvals:

Process Plan: *CL*

Date: *11/02/23* Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3510	Rev C								
100	MORI SEIKI CNC LATHE LARGE	0.00							
	Mori Seiki	0.00							
Mori Seiki CNC Lathe Large	Memo Turn as per Dwg D3510 & Folio FA652 Ensure that DT8877A Plug fits in tube.								
		30.50							
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
	QC	0.00							
Quality Control	Memo								

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66663

Wednesday, February 23, 2011 1:13:18 PM



Page 2

Item ID: D3510-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 HAAS 1 HAAS CNC vertical machine #1	HAAS CNC VERTICAL MACHINING #1 Memo 1-Machine as per Folio FA652 and Dwg D3510 2-Deburr Note: *-****.250" dia holes are to opened to finish size by skidtube dept, and missing .266" dia hole is to be drilled by skid dept. *****	0.00 0.00		A.A	11/03/17	3	0		
130 QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00		B.A	11/03/17	3	0		
140 QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00		smf	11/03/12	3	0		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66663

Wednesday, February 23, 2011 1:13:18 PM



Page 3

Item ID: D3510-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00

Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Drill .266" Dia hole using DT8877B as per Dwg D3510

2-Counter bore wearplate holes as per Dwg d3510.

3-open wearplate holes to .297 as per Dwg D3510.

4-Deburr

160

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

170

0.00



Chemical Conversion Coat per QSI005 4.1

HandFinish

Memo

0.00

Hand Finishing

Handwritten: 11-3-18 (3)

Handwritten: Sub 3/18

Handwritten: (x3)

Handwritten: 1 BK 11-3-21 (3)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66663

Wednesday, February 23, 2011 1:13:18 PM

Page 4

Item ID: D3510-041

Accept

Setup Start

Revision ID:

Stop

Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011 Start Qty: 2.00

Required Date: 3/4/2011 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

190

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

Install inserts as per Dwg D3510

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Sulzer

3 0 11/03/21

3 0 11/03/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66663

Wednesday, February 23, 2011 1:13:18 PM



Page 5

Item ID: D3510-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011 Start Qty: 2.00



Cust Item ID:

Required Date: 3/4/2011 Req'd Qty: 2.00



Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo P1P67136	0.00 0.00							
220 QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							

4/3/22 (3)

11/3/22

mf

11-03-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, February 23, 2011 1:13:14 PM

Page 1

Work Order ID: 66663

Parent Item: D3510-041

Parent Item Name: Skidtube Insert Assembly



Start Date: 2/23/2011

Required Date: 3/4/2011

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev:A New Issue 06-10-12 JLM
IPP Rev:B ALES-1032 and ALS4-428 insert now used ECN 1036 DD
IPP Rev:C Revised manufacturing steps for LG 08-09-29 Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M6061T6T3.500W.375

Purchased

No

100

f

8.5000

2.55

5.368421



6061-T6 RD Tube 3.50 X .375 W

Location

Loc Qty

Loc Code

MAT

8.5

112582

8.5

190

Each

4,015.000

6

12

ALS4-1032-225

Purchased

No



Insert

Location

Loc Qty

Loc Code

PK011

4015

110768

4015

190

Each

93.0000

2

ALS4-428-165

Purchased

No



Inserts

Location

Loc Qty

Loc Code

FP

5

6989

5

ST282

88

114172

88

11.3.16

11.3.16

11/03/22

11/03/22

11/03/22

11/03/22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 2

Wednesday, February 23, 2011 1:13:15 PM

Work Order ID: 66663



Parent Item: D3510-041



Parent Item Name: Skidtube Insert Assembly

Start Date: 2/23/2011

Required Date: 3/4/2011

Start Qty: 2.00

Required Qty: 2.00

ALS7-1032-130

Purchased

No

190

Each

1,814.000

2



Insert

46
JK

11/03/22

Location

Loc Qty

Loc Code

FP

21

115079

21

ST282

1793

111529

32

113238

17

115502

500

115581

244

116800

1000

x6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	66663
Description: Skidtube Insert		Part Number:	D3510-041
Inspection Dwg: D3510	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø3.300	+/-0.010	3.302	/		20.02	
Ø2.940	+/-0.010	2.940	/			
Ø2.750	+/-0.010	2.752	/			
R0.25 x 0.066	+/-0.010	0.25 x .66	/			
15.00	+/-0.030	15.00	/			
0.063 x 45°	+/-0.010 x 0.5°	.063	/			
0.125 x 45°	+/-0.010 x 0.5°	.125	/			
5.270	+/-0.010	5.270	/			
3.265	+0.000/-0.010	3.263	/			
30.50	+/-0.030	30.515	/			
9.515	+/-0.010	9.514	✓		Vern	CNC-02
6.875	+/-0.010	6.875	✓		"	"
13.750	+/-0.010	13.750	✓		TAPE	GA-12
1.600	+/-0.010	1.600	✓		H-6	31006
2.165	+/-0.010	2.165	✓		Vern	GA-01
6.735	+/-0.010	6.745	-		Vern	CNC-02
2.981	+/-0.010	2.981	✓		H-6	31006
2.434	+/-0.010	2.434	✓		Vern	GA-01
1.036	+/-0.010					
Ø0.266	+0.006/-0.001	Ø0.267	✓		Vern	GA-01
Ø0.391	+/-0.010	Ø0.393	✓		"	"
Ø0.516 x 0.100	+/-0.010	Ø0.521 x .101	✓		Vern	GA-01

Measured by: *AL/B.A.*
Date: *11/3-16/11/03/17*

Audited by: *CML*
Date: *11/03/18*

Prototype Approval: N/A
Date: N/A

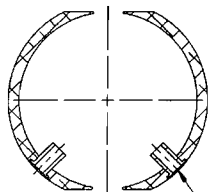
Rev	Date	Change	Revised by	Approved
A	09.06.01	New Issue	KJ <i>[Signature]</i>	<i>[Signature]</i>

A
A

C
B
D
C
D

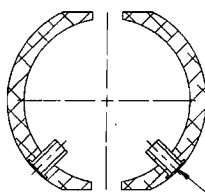
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 66663
071102123

D3510-041 SKIDTUBE INSERT



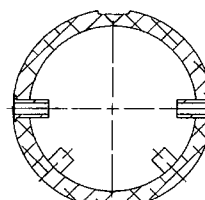
SECTION A-A

AFTER FINISH,
INSTALL AELS-1032-130
(2 PLACES)



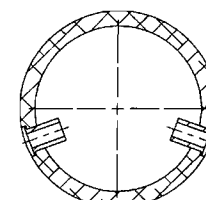
SECTION B-B

AFTER FINISH,
INSTALL AELS-1032-225
(4 PLACES)



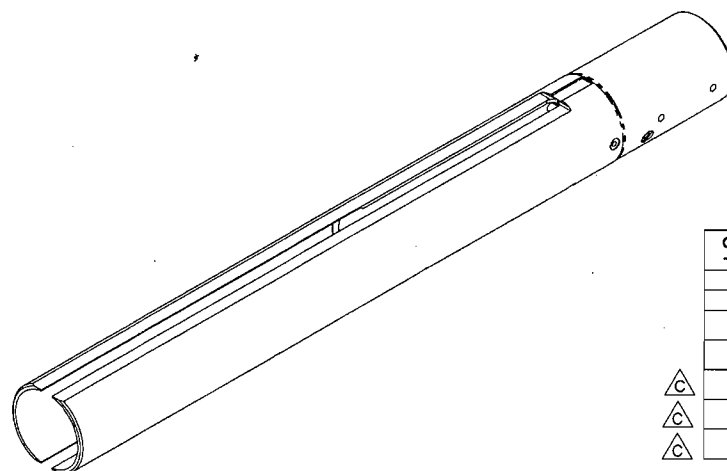
SECTION C-C

AFTER FINISH,
INSTALL AELS-1032-225
(2 PLACES)



SECTION D-D

AFTER FINISH,
INSTALL ALS4-428-165
(2 PLACES)



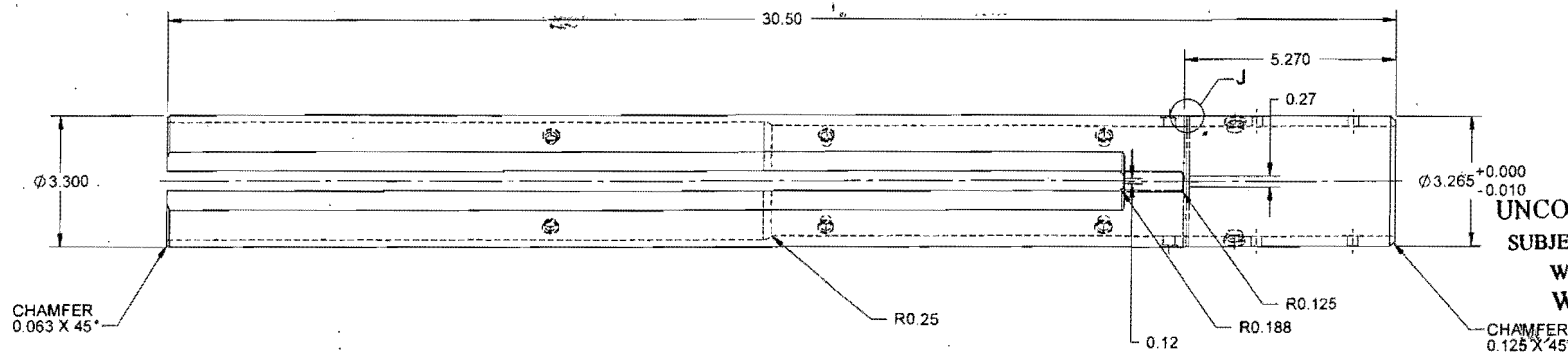
PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3510-041	SKIDTUBE INSERT
1	D6016-065	EXTRUSION
2	AELS-1032-130	INSERT
6	AELS-1032-225	INSERT
2	ALS4-428-165	INSERT

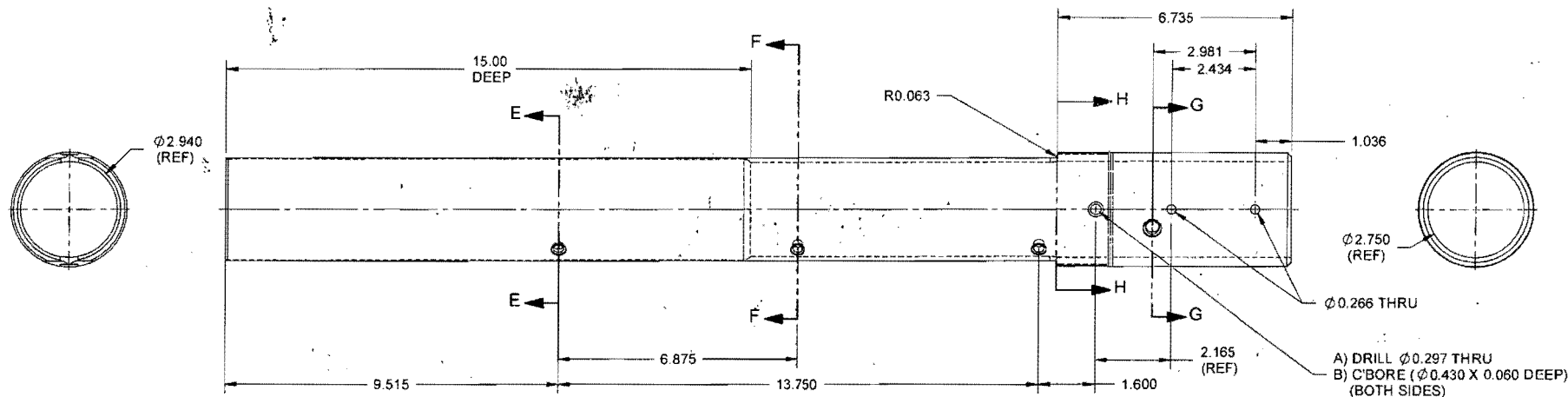


C	UPDATE DRAWING FORMAT AND CLARITY FOR MFG. CHANGE INSERTS FOR EASE OF INSTALLATION	PH	07.10.04
B	UPDATE DIMENSIONS	PH	06.09.20
A	NEW ISSUE	PH	06.04.21
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	PH		
CHECKED	PH	DRAWING NO.	REV. C
MFG. APPR.	PH	D3510	SHEET 1 OF 3
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	SKIDTUBE INSERT	1:3
DATE	07.10.04	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

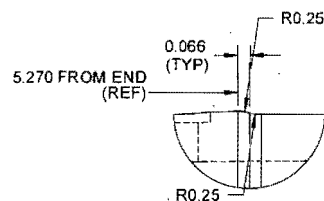
RELEASED
07-11-16



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER 66663



MACHINING DETAIL 1 (MAKE FROM D6016-065 EXTRUSION)



- NOTES:**
- 1) MATERIAL: MAKE FROM D6016-065 EXTRUSION
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 5.50 lbs

DESIGN	AK	DART AEROSPACE USA, INC.	
DRAWN	AK	PORT HADLOCK, WA	
CHECKED	AK	DRAWING NO.	REV. C
MFG. APPR.	AK	D3510	SHEET 2 OF 3
APPROVED	AK	TITLE	SCALE
DE APPR.	AK	SKITTUBE INSERT	1:3
DATE	07.10.04	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR FOR ANY OTHER PERSON OR ENTITY WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED
07-11-16

